

otal Site Area	129,163 sf (2.97 ac)
andscaping Required Total Required (15% of Total Area)	19,348 sf
I ndscaping Provided Total Landscapina	27.278 sf

DEVELOPMENT STANDARDS	
Zoning	GC
Minimum Street Setback	None
Minimum Interior Setback	None
Maximum Base Height	35'
Maximum Impervious Surface	85%
Landscape Setbacks:	
Public Right-of-Way & Private Access	15'

	Sheet List Table
Sheet Number	Sheet Title
Construction: C	10
C1	Civil Site Plan
C2	Construction Notes
23	Existing Conditions, Clearing & TESC Plan
C4	Grading Plan
C5	Grading & TESC Details
26	Site Cross Sections
27	Site Cross Sections
C8	Paving Plan
C9	Stormwater Management Overview Plar
C10	Stormwater Management Details



LEGAL DESCRIPTION

PARCEL A: LOT 4 OF SHORT PLAT NO. SP-102(5-82) RECORDED UNDER RECORDING NO. 8211290093, RECORDS OF SNOHOMISH COUNTY, WASHINGTON, BEING A PORTION OF NORTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 33, TOWNSHIP 31 NORTH, RANGE 5 EAST, W.M., SNOHOMISH COUNTY, WASHINGTON.

EXCEPT THAT PORTION CONVEYED TO SNOHOMISH COUNTY BY DEED RECORDED UNDER RECORDING NO. 9412080055.

PARCEL B: PARCEL B OF CITY OF MARYSVILLE BOUNDARY LINE ADJUSTMENT NO. BLA20-008, RECORDED UNDER SNOHOMISH COUNTY AUDITOR'S FILE NO.2021-3255002.

DATUM & BENCHMARK DATUM:

HORIZONTAL DATUM: NAD 83/2011 VERTICAL DATUM: NAVD 88

BENCHMARK:

SURVEYOR GENERAL NOTES

PRECISION OF CONTROL TRAVERSE IS AT HIGHER LEVEL THAN MINIMUM STANDARDS REQUIRED BY WAC 332-130-090.

- FIELD SURVEY CONDUCTED USING A COMBINATION OF GPS USING THE WASHINGTON STATE REFERENCE NETWORK (WSRN) AND/OR A 5 SECOND DIRECT READING TOTAL STATION. METHOD: GPS, TRAVERSE AND RADIAL SURVEY.
- 3. ALL DISTANCES ARE IN FEET.
- 4. THIS SURVEY REPRESENTS VISIBLE PHYSICAL IMPROVEMENT CONDITIONS EXISTING ON MARCH 4, 2020. ALL SURVEY CONTROL INDICATED AS "FOUND" WAS RECOVERED FOR THIS PROJECT IN MARCH OF 2020.

SUBSTRUCTURES

BURIED UTILITIES ARE SHOWN AS INDICATED ON RECORDS MAPS FURNISHED BY OTHERS AND VERIFIED WHERE POSSIBLE BY FEATURES LOCATED IN THE FIELD. WE ASSUME NO LIABILITY FOR THE ACCURACY OF THOSE RECORDS. FOR THE FINAL LOCATION OF EXISTING UTILITIES CRITICAL TO DESIGN, CONTACT THE UTILITY OWNER/AGENCY.

TELECOMMUNICATIONS/FIBER OPTIC DISCLAIMER

RECORDS OF UNDERGROUND TELECOMMUNICATIONS AND/OR FIBER LINES ARE NOT ALWAYS AVAILABLE TO THE PUBLIC NORTH PEA CONTACTED EACH OF THE MANY COMPANIES IN THE COURSE OF THIS SURVEY WHICH MAY HAVE UNDERGROUND LINES WITHIN THE ADJACENT RIGHTS-OF WAY. NORTH PEAK ASSOCIATES LLC, DOES NOT ACCEPT RESPONSIBILITY FOR THE EXISTENCE OF UNDERGROUND TELECOMMUNICATIONS/FIBER OPTIC LINES WHICH ARE NOT MADE PUBLIC RECORD WITH THE LOCAL JURISDICTION.

PROJECT INFORMATION 310533-002-052-00 & Tax Parcel Numbers

310533-002-053-00 Total Area GPP Designation Existing Zoning Existing Land Use

Sewage Disposal:

Water District:

School District:

Fire District:

Post Office:

Electric:

Phone:

Cable:

CONTACT PERSON

Land Technologies Inc.

merle@landtechway.com

Land Technologies, Inc.

tyler@landtechway.com

18820 3rd Ave. NE Arlington, WA 98223

Merle Ash

360.652.9727

ENGINEER

360.652.9727

SURVEYOR

206.601.4682

Tyler S. Foster, P.E.

18820 3rd Ave NE

Arlington, WA 98223

Steven C. Berg, PLS

Woodinville, WA 98072

ACT. THIS ____ DAY OF ____ , 202_.

Gas:

129,1632.97 GC (General Commercial) Undeveloped Proposed Land Use General Commercial

LOCAL SERVICES City Of Marysville City Of Marysville Marysville #25 City Of Marysville City of Marysville Snohomish County PUD Frontier

Comcast PSE

> SITE ADDRESS 15223 Smokey Point Blvd Marysville, WA 98271

APPLICANT/OWNER Quality Auto Center

15223 Smokey Point Blvd Marysville, WA 98271

CERTIFIED EROSION CONTROL SPECIALIST

North Peak Associates LLC 17270 Woodinville-Redmond Rd

CONSTRUCTION DRAWING REVIEW ACKNOWLEDGEMENT THIS PLAN SHEET HAS BEEN REVIEWED AND EVALUATED FOR GENERAL COMPLIANCE WITH THE APPLICABLE CITY OF MARYSVILLE CODES AND ORDINANCES.

CONFORMANCE OF THIS DESIGN WITH ALL APPLICABLE LAWS AND REGULATIONS IS THE FULL AND COMPLETE RESPONSIBILITY OF THE LICENSED DESIGN ENGINEER, WHOSE STAMP AND SIGNATURE APPEAR ON THIS SHEET. ACKNOWLEDGMENT OF CONSTRUCTION DRAWING REVIEW DOES NOT IMPLY CITY APPROVAL FOR CONSTRUCTION ACTIVITIES THAT REQUIRED OTHER COUNTY, STATE OR FEDERAL PERMIT REVIEW AND APPROVAL. THE PROPERTY OWNER AND LICENSED DESIGN ENGINEER SHALL BE RESPONSIBLE FOR THE ACQUISITION AND COMPLIANCE OF ALL APPLICABLE PERMITS OR AUTHORIZATIONS WHICH MAY INCLUDE BUT ARE NOT LIMITED TO: WSDFW HYDRAULIC PROJECT APPROVAL (HPA), WSDOE NOTICE OF INTENT (NOI), ANY CORPS OF ENGINEERS FILL PERMITS AND THE REQUIREMENTS OF THE ENDANGERED SPECIES

KEN MCINTYRE, P.E., DEVELOPMENT SERVICES MANAGER THESE APPROVED CONSTRUCTION PLANS EXPIRE AFTER PERIOD OF 60 MONTHS FROM THE DATE SHOWN ABOVE OR UPON EXPIRATION OF PRELIMINARY PLAT OR SITE PLAN APPROVAL, PER MMC 22A.040.020 & 22A.040.030.



SHEET

24x36

PA 22-___

C1 of C10

LEGEND					
	 Boundary Line 		Existing Path		Design Path
	 Design Right-of-Way Line 		Design Building	w	Design Water Line
	 Existing Right-of-Way Line 		Existing Building	w w	Existing Water Line
	- Design Major Contour Line		Design Building Setback Line	-0	Design/Existing Water Hydra
	 Existing Major Contour Line 	SD	Design Storm Drainage Line	• •	Design/Existing Water Fittings
	- Design Minor Contour Line	SD SD SD SD	Existing Storm Drainage Line	X	Design Fence
	- Existing Minor Contour Line		Design/Existing Type 1 Catch Basin	X	Existing Fence
	- Phase Line		Design/Existing Type 2 Catch Basin	<u> </u>	Existing Wetland Line/Hatch
	- Design Tract Line	• 0	Design/Existing Storm Drain Clean-out		Design Buffer Line/Hatch
	- Design Lot line	YD	Design Yard Drain Line		Existing Buffer Line/Hatch
	 Existing Lot Line 		Design Yard Drain Catch Basin	_ · · · _ · · -	Existing Section Line
	- Design Easement Line	• •	Design Yard Drain Clean-out		Existing Section Symbol
	 Existing Easement Line 		Decian Shed Dispersion	— – OHP – – – OHP – —	Existing Power Line
	- Design Road Centerline		Design shed Dispersion	202	Existing Power Symbol
	 Existing Road Centerline 		Design Drainage Basin	— — T — — T — — T — — T — —	Existing Telephone Line
igodol	Site Benchmark	> >	Design Swale Line		Existing Telephone Symbol
\bullet	Existing Benchmark	>	Existing Ditch line	——————————————————————————————————————	Existing Gas Line
	Design Edge of Asphalt	SS	Design Sanitary Sewer Line		Existing Gas Symbol
_ _ _ _ _ \	Existing Edge of Asphalt	SS SS	Existing Sanitary Sewer Line		Existing Flow Path
<u>A</u>	Design Sidewalk		Design/Existing Sanitary Sewer Manhole	~~~~~	Existing Tree Drip Line
· · · · ·	Existing Sidewalk	• 0	Design/Existing Sanitary Sewer Clean-out		
	Design Driveway Line/Hatch	SS	Design Sanitary Side Sewer		

SEWER SYSTEM NOTES

- Sanitary sewer pipe and side sewers shall be 10 feet away from building foundations and/or roof lines. 2. No side sewers shall be connected to any house or building until all manholes are adjusted to the finished grade of the completed asphalt roadway and the asphalt patch and seal around the ring are accepted
- 3. After all other utilities are installed and prior to asphalt work, all sanitary pipes shall pass a low pressure air test in accordance with Section 7-17 of the "Standard Specifications". Products used to seal the inside of the pipe are not to be used to obtain the air test.
- I. For commercial developments in which sources of grease and/or oils may be introduced to the City sanitary sewer system, a City approved grease interceptor shall be installed downstream from the source.
- 5. The City of Marysville Community Development Department shall be notified a minimum of 48 hours in advance of a tap or connection to an existing sanitary sewer main. The inspector shall be present at the time of the tap or connection. 6. The Contractor shall be fully responsible for the location and protection of all existing utilities. The Contractor shall verify all utility locations prior to construction by calling the Underground Locate Line at 1-800-424-5555 a minimum of 48 hours prior to any
- excavation Gravity sewer main with □5' of cover shall be D.I.P. Class 52; 5'-18' of cover shall be PVC, ASTM D 3034 SDR 35, or ASTM F 789 with joints
- and rubber gaskets conforming to ASTM D 3212 and ASTM F 477; 118' cover shall be D.I.P. Class 52, or C-900. 8. Precast manholes shall meet the requirements of ASTM C 478. Manholes shall be Type 1-48" manhole unless otherwise specified on the plans. Joints shall be rubber gasketed conforming to ASTM C 443 and shall be grouted from the inside. Lift holes shall be grouted from the outside and inside of the manhole.
- 9. Side sewer services shall be PVC, ASTM D 3034 SDR 35 with flexible gasketed joints. Side sewer connections shall be made by a tap to an existing main or a tee from a new main connected above the springline of the pipe.
- 10. All sewer mains shall be field staked for grades and alignment prior to construction by a licensed engineer or surveying firm qualified to perform such work. Prior to constructing any sewer, the lot corners shall be staked and sewer line location established by survey, cost of which shall be borne by the Developer
- 11. All plastic pipe and services shall be installed with continuous tracer tape installed 12" to 18" under the proposed finished subgrade. The marker shall be plastic non-biodegradable, metal core or backing marked sewer which can be detected by a standard metal
- 12. Each side sewer lateral shall have a 2" x 4" wood "marker" at the termination of the stub. The "marker" shall extend from the trench to above finished grade. Above the ground surface, it shall be painted "green" with SEWER and the depth, in feet, stenciled in white letters 2" high.
- 13. Side sewers shall be installed by the Developer and coordinated for clearance with power, telephone, and other utilities 14. All side sewers to be installed 10 feet into lot served and staked and marked as shown on these plans.
- 15. Pipe bedding shall be in accordance with WSDOT Standard Plan B-18c Class F. Pea gravel is an acceptable bedding material. All according to 7-02.3(1). This shall include necessar eveling of the trench bottom or the top of the foundation materials as well as placement and compaction of required bedding material to uniform grade so that the entire length of the pipe will be supported an a uniformly dense unyielding base.
- 16. A 6-foot square X 4-inch thick concrete pad shall be installed around all SSMH'S and a 3-foot square X 4-inch thick concrete pad shall be installed around all cleanouts that are not in a pavement area.
- 17. All lines shall be cleaned and pressure tested prior to paving in conformance with the above referenced specifications. Testing of the sanitary sewer main shall include TV-ing of the main by the Contractor. Immediately prior to TV-ing, enough water shall be run down the line so it comes out the lower manhole. A copy of the video tape shall be submitted to the City of Marysville. Acceptance of the line will be made after the tape has been reviewed and approved by Public Works. A water test of all manholes in accordance with Marysville standard may also be required. Testing shall take place after all underground utilities are installed and compaction of the roadway subgrade is completed.
- 18. Prior to backfill all mains and appurtenances shall be inspected and approved by the City of Marysville Department of Public Works. Approval shall not relieve the Contractor for correction of any deficiencies and/or failures as determined by subsequent testing and inspections. It shall be the Contractor's responsibility to notify the City of Marysville for the required inspections

WATER SYSTEM NOTES

- 1. Biological test samples will be taken by the City (or FMWC, VW or TCW when served by that purveyor) and paid for by the contractor. 2. Water mains shall have a minimum cover of 36 inches in improved right-of-way and a minimum of 48 inches in unimproved right-of-way and easements.
- 3. Pipe for water mains shall be ductile iron conforming to Section 7-09 of the Standard Specifications, Class 52 with tyton or approved equal joints. Pipe shall be cement lined in accordance with A.S.A. Specification A 21.4-1964.
- 4. Connections to existing water mains shall typically be wet taps through a tapping 'tee' and tapping valve and shall be made by a ity-approved contractor. The tapping sleeve shall be epoxy coated or ductile iron. Stainless sleeves shall only be used on AC pipe. The City (or FMWC, VW or TCW when served by that purveyor) shall approve the time and location for these connections.
- 5. All water mains and appurtenances shall be hydrostatically tested at 200 psi in accordance with City Standards.
- 6. Fire hydrants shall be installed in accordance with City Standard Detail 2-060-001 and as directed by the City of Marysville Fire Code 7. Valve marker posts shall be installed where valve boxes are hidden from view or in unpaved areas.
- 8. Resilient seated wedge gate valves shall be used for 10-inch mains and smaller. Butterfly valves shall be used for mains greater than 10
- 9. Pipe fitting for water mains shall be ductile iron and shall be mechanical joint conforming to AWWA Specification C111-72.
- 10. Water main pipe and service connections shall be a minimum of 10 feet away from building foundations and/or roof lines.
- 11. Where a water main crosses the Northwest Gas pipeline, the water line shall be cased with PVC pipe a minimum of 10 feet beyond each side of the gas line easement. Contact Williams Northwest Pipeline before the crossing is made. 12. Trenching, bedding, and backfill for water mains shall be installed in accordance with City Standard Detail 3-703-002 and-003.
- 13. All commercial and industrial developments, irrigation systems, and multi-family water service connections shall be protected by a double check valve assembly or a reduced pressure backflow assembly as directed by the City conforming to City Standard Details
- 14. Any lead joint fitting disturbed during construction shall be replaced with a mechanical joint fitting at the contractor's expense.

ARCHAEOLOGICAL RESOURCES NOTE

If at any time during construction archaeological resources are observed in the project area, work should be temporarily suspended at that location and a professional archaeologist should document and assess the discovery. The Department of Archaeology and Historic Preservation (DAHP) and all concerned tribes should be contacted for any issues involving Native American sites. If project activities expose human remains, either in the form of burials or isolated bones or teeth, or other mortuary items, work in that area should be stopped immediately. Local law enforcement, DAHP, and affected tribes should be immediately contacted, No additional excavation should be undertaken until a process has been agreed upon by these parties, and no exposed human remains should be left unattended.

CONTRACTOR NOTE

t is the responsibility of the contractor and construction manager to ensure that all conflicts between plan sets are identified and resolved prior to commencement of construction activities.



GENERAL NOTES

- set of approved plans at the meeting.
- completed to the satisfaction of the City prior to acceptance of the water, sanitary sewer and storm systems.
- Development Standards (hereinafter referred to as the "City Standards").
- representative.
- <u>425.512.7099</u>.
- project is emergency phone ____
- enter the city stormwater drainage system or a natural drainage system
- of work.
- the plans and field conditions. Conflicts shall be resolved (including plan and profile revisions) and resubmitted for approval prior to proceeding with construction.
- proceeding with construction.
- 14. Temporary street patching shall be allowed for as approved by the City Engineer. Temporary street patching shall be provided by
- 15. Provide traffic control plan(s) in accordance with the Manual on Uniform Traffic Control Devices (MUTCD) as required.
- 16. It shall be the responsibility of the Contractor to have a copy of these approved plans on construction site at all times.

- 20. Power, street light, cable, and telephone lines shall be in a trench located within a 10-foot utility easement adjacent to public
- surveyor or a Washington State licensed professional civil engineer.
- 23. Certified record drawings are required prior to project acceptance.
- Department of Ecology web site www.ecy.wa.gov/programs/wq/stormwater/construction/.
- implementation of the Mitigation Plan shall be at the developer's expense.
- expressly exempt by the current adopted International Building Code.
- completed by the Building Department. Call 360-363-8100 to schedule the inspection.

CONSTRUCTION SEQUENCE

- 3. Install construction zone road signs.
- 4. Grade and install construction entrance(s)
- 5. Place silt fence, straw bales, etc. as necessary to prevent sediment-laden runoff from leaving site.
- 6. Provide protection for existing offsite catch basins and other drainage facilities.
- 7. Grade and stabilize roads and interceptor swales in conjunction with clearing and grading activity.
- 8. Install temporary sedimentation measures. of Marysville standards.
- 11. Remove any temporary sediment controls when permanent drainage is complete and erosion measures are in place and functional.
- 12. Remove remaining temporary erosion control measures when danger of erosion has passed and site is stabilized with final City approval.

A PORTION OF SECTION 33, TOWNSHIP 31 NORTH, RANGE 5 EAST, W.M.

during construction.



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(###)

22.00.000000

Water Hydrants

Water Fittings

Design Filter Strip Design Area of Disturbance Design Temporary Silt Fence Temporary Construction Entrance Existing Soil Log **BMP** Designations

Designed Bio-Retention Cell

Designed Bio-Retention Cell Lined

Road Drain Dispersion w/100' Flow Path

NGPA signs 123

All work in City right-of-way requires a permit from the City of Marysville. Prior to any work commencing, the general contractor shall arrange for a preconstruction meeting at the Development Services Center to be attended by all contractors that will perform work shown on the approved engineering plans, representatives from all applicable utility companies, the project owner and appropriate city staff. Contact Development Services at (360-363-8100) to schedule the meeting. The contractor is responsible to have their own

2. After completion of all items shown on these plans and before acceptance of the project the contractor shall obtain a "punch list" prepared by the City's inspector detailing remaining items of work to be completed. All items of work shown on these plans shall be

3. All materials and workmanship shall conform to the Standard Specifications for Road, Bridge, and Municipal Construction (hereinafter referred to as the "Standard Specifications"), Washington State Department of Transportation and American Public Works Association, Washinaton State Chapter, latest edition, unless superseded or amended by the City of Marysville City Engineering Design and

4. All work within the development and City right-of-way shall be subject to the inspection of the City engineer or designated

5. Prior to any site construction including clearing/logging or grading, the site clearing limits shall be located and field identified by the project surveyor (or project engineer) as required by these plans. The project surveyor's name and phone number is Darren Riddle,

6. The developer, contractor and project engineer is responsible for water quality as determined by the monitoring program established by the project engineer. The project engineer's name and phone number is Tyler Foster, 360.652.9727.

7. The contractor shall be responsible for obtaining all permits for utility, road, and right-of-way construction. The contractor for this _. Contact person is _____ _____. Phone _____, Mobile phone _____,

8. The Construction Stormwater Pollution Prevention Plan (SWPPP) Best Management Practices (BMP's) shall be constructed in accordance with the approved SWPPP prior to any grading or extensive land clearing. These facilities must be satisfactorily maintained until construction and landscaping is completed and final stabilization has occurred. Sediment laden waters shall not 9. The contractor shall keep two sets of plans on site at all times for recording record drawing information; one set shall be submitted to the project engineer, and one set shall be submitted to the City engineer at completion of construction and prior to final acceptance

10. Prior to construction the owner and/or contractor shall notify the project engineer and the City engineer when conflicts exist between

11. Any revisions made to these plans, or changes to the design must be reviewed and approved by the developer's engineer and the City prior to any implementation in the field. The City shall not be responsible for any errors and/or omissions on these plans. 12. The contractor shall have all utilities verified on the ground prior to any construction. Call (811) at least two working days in advance. Prior to construction the owner and/or contractor shall notify the project engineer and the City engineer when conflicts exist between the plans and field conditions. Conflicts shall be resolved (including plan and profile revisions) and resubmitted for approval prior to

13. City of Marysville horizontal datum shall be NAD 83, and the vertical datum shall be NAVD 88, in Washington State Plane Coordinates (feet), Washington North Zone 4601. A list of benchmarks is available through the Public Works Department.

placement and compaction of ATB or Class B asphalt concrete. Contractor shall be responsible for maintenance as required.

17. Any structure and/or obstruction that requires removal or relocation relating to this project shall be done so at the developer's

18. Locations of existing utilities are approximate. It shall be the contractor's responsibility to determine the true elevations and locations of hidden utilities. All visible items shall be the engineer's responsibility. Location of utilities shown on construction plans are based on best records available and are subject to variation. For assistance in utility location, call 1-800-4245555.

19. The contractor shall install, replace, or relocate all signs, as shown on the plans or as affected by construction, per City Standards.

right-of-way. Right-of-way crossings shall have a minimum horizontal separation from other utilities (sewer, water, and storm) of 5 feet. 21. All construction surveying for extensions of public facilities shall be done under the direction of a Washington State licensed land

22. During construction, all public streets adjacent to this project shall be kept clean of all material deposits resulting from on-site construction, and existing structures shall be protected as directed by the City.

24. A NPDES Stormwater General Permit may be required by the Department of Ecology for this project. For information visit the

25. Any disturbance or damage to Critical Areas and associated buffers, or significant trees designated for preservation and protection shall be mitigated in accordance with a Mitigation Plan reviewed and approved by the City's Planning Division. Preparation and

26. A grading permit issued pursuant to the current adopted International Building Code, and approval of the temporary erosion and sedimentation control plan shall be obtained from the Community Development Department prior to any on-site grading work not

27. Prior to commencement of framing, final drainage inspection and approval of the roof leader and positive footing systems shall be

Arrange and attend a pre-construction meeting with City staff, the on-site erosion control specialist, the design engineer, and owner. 2. Identify clearing limits and stream/wetland NGPA areas as required with flagging and/or temporary orange construction fence. Wetland buffer marking is to be checked by wetland consultant (or the county) before clearing begins.

9. Clear and grub site. Complete mass grading. Reconstruct sediment-trapping measures as grading progresses. Relocate surface water controls and erosion control measures, or install new measures as site conditions change so as to maintain compliance with City

10. Final grade, construct and pave roadways. Ensure that the permanent drainage system is complete and functional.

Add topsoil to planting areas. Plant rain gardens and wetland areas in accordance with landscape and wetland mitigation plans.

GRADING, EROSION AND SEDIMENTATION CONTROL NOTES All limits of clearing and areas of vegetation preservation as prescribed on the plans shall be clearly flagged in the field and observed

- 2. All required sedimentation and erosion control facilities must be constructed and in operation prior to any land clearing and/or other construction to ensure that sediment laden water does not enter the natural drainage system. The contractor shall schedule an inspection of the erosion control facilities prior to any land clearing and/or other construction. All erosion and sediment facilities shall be maintained in a satisfactory condition as determined by the City, until such time that clearing and/or construction is completed and final stabilization has occurred. The implementation, maintenance, replacement and additions to the erosion and sedimentation control systems shall be the responsibility of the permittee.
- 3. The erosion and sedimentation control system facilities depicted on these plans are intended to be minimum requirements to meet anticipated site conditions. As construction progresses and unexpected or seasonal conditions dictate, facilities will be necessary to ensure complete siltation control on the site. During the course of construction, it shall be the obligation and responsibility of the permittee to address any new conditions that may be created by his activities and to provide additional facilities, over and above the minimum requirements, as may be needed to protect adjacent properties, sensitive areas, natural water courses, and/or storm drainaae systems.
- 4. Approval of these plans is for grading, temporary drainage, erosion and sedimentation control only. It does not constitute an approval of permanent storm drainage design, size or location of pipes, restrictors, channels, or retention facilities.
- 5. Any disturbed area which has been stripped of vegetation and where no further work is anticipated for the time period set forth by the SWPPP, must be immediately stabilized with mulching, grass planting, or other approved erosions control treatment applicable to the time of year in question. During the dry season (May 1 - September 30) soils may be exposed and unworked for 7 days. During the wet season (October 1 - April 30) soils may be exposed and unworked for 2 days. Grass seeding alone will be acceptable only during the dry season. Seeding may proceed outside the specified time period whenever it is in the interest of the permittee but augmented with mulching, netting, or other treatment approved by the City.
- 6. In case erosion or sedimentation occurs to adjacent properties, all construction work within the development that will further aggravate the situation must cease, and the owner/contractor will immediately commence restoration methods. Restoration activity will continue until such time as the affected property owner is satisfied.
- 7. Stockpiles are to be located in safe areas adequately protected by temporary seeding and mulching. Hydroseeding is preferred. No temporary or permanent stockpiling of materials or equipment shall occur within critical areas or associated buffers, or the critical root zone for vegetation proposed for retention.
- 8. Non-compliance with the requirements for erosion controls, water quality, and clearing limits may result in revocation of project permit, plan approval, and bond foreclosures.
- 9. All earth work shall be performed in accordance with City Standards. Pre-construction soils investigation may be required to evaluate soils stability.
- 10. If cut and fill slopes exceed a maximum of two feet horizontal to one foot vertical, a rock or concrete retaining wall may be required. All rock retaining walls greater than four (4) feet in height are to be designed and certified by a professional engineer experienced in soil mechanics
- 11. The Surface of all slopes shall be compacted. This may be accomplished by over-building the slopes, then cutting back to final grades; or by compacting each lift as the slope is being constructed. All slopes shall be compacted by the end of each working day.
- 12. Upon completion of work, final reports must be submitted to the City in conformance with the current City adopted International Building Code.

MAINTENANCE OF SILTATION BARRIERS

Siltation barriers shall be inspected immediately after each rainfall and at least daily during prolonged rainfall. Close attention shall be paid to the repair of damaged bales, end runs and undercutting beneath bales. Necessary repairs to barriers or replacement of bales shall be accomplished promptly. Sediment deposits should be removed after each rainfall. Sediment deposits must be removed when sediment level reaches approximately one-half the siltation barrier height. Any sediment deposits remaining in place after the straw bale barrier is no longer required shall be dressed to conform to the existing grade, prepared and seeded.

TEMPORARY GRAVEL CONSTRUCTION ENTRANCE

- 1. The temporary construction entrance should be cleared of all vegetation, roots, and other objectionable material. Any drainage facilities required because of washing should be constructed according to specifications in the plan. If wash racks are used, they should be installed according to manufactures specifications.
- 2. Gravel shall be crushed ballast rock, 8" to 12" in depth and installed to the specified dimensions at the entrance.
- 3. The gravel ballast rock shall be 4" to 8" in diameter and placed across the full width of the vehicular ingress and egress area. The length of entrance shall be a minimum of 100 feet.
- 4. If conditions on the site are such that most of the mud is not removed from vehicle tires by contact with the gravel, then the tires must be washed before vehicles enter onto a public road. Wash water must be carried away from entrance to a settling area to remove sediment. A wash rack may also be used to make washing more convenient and effective.
- The entrance shall be maintained in a condition which will prevent tracking or flow of mud onto public rights-of-way. This may require periodic top dressing with 2" stone, as conditions demand, and repair and/or clean out any structures used to trap sediment. All materials spilled, dropped, washed or tracked from vehicles onto roadway or into storm drains must be removed immediately

HYDROSEEDING GENERAL NOTES

construction plans and City of Marysville Standards.

2. All disturbed areas such as retention facilities, roadway backslopes, etc., shall be seeded with a perennial around cover arass to

Construction Acceptance: Will be subject to a well established ground cover that fulfills the requirements of the approved

- minimize erosion. Grass seeding will be done using an approved hydroseeder or as otherwise approved by the City of Marysville. 3. Preparation of Surface: All areas to be seeded shall be prepared in a manner consistent with BMP T5.13 Post Construction Soil Quality
- and Depth in Chapter 5 of Volume V of the stormwater manual.
- 4. Immediately following finish grading permanent vegetation shall be applied consistent with the design and maintenance standards for Temporary and Permanent Seeding in the City adopted Department of Ecology Stormwater Management Manual for Western Washinaton.
- 5. All hydroseeding firms shall have a printout of the application rate for each job readily available for inspection by the Construction
- Inspection Division of Community Development. 6. The City of Marysville Construction Inspection Division of Community Development shall be notified of potential hydroseeding prior toe the commencement of same to ensure compliance of these specifications.

ROADWAY NOTES

- Monuments shall be installed at all street intersections, at angle points, and points of curvature in each street. All boundary monuments must be installed according to the Washington State subdivision laws.
- 2. Curb and gutter installation shall conform to City Standard Detail 3-514.

disconnects shall be graded to a positive 2 percent slope from top of curb.

- 3. Sidewalks and driveways shall be installed as lots are built on. Sidewalks and driveways shall conform to City Standard Detail 3-303-001 and -002. If asphalt is damaged during replacement of curb and gutter, the repair shall conform to City Standard Detail 3-514-001.
- 4. The surrounding ground (5 feet beyond the base) for all power transformers, telephone/TV pedestals, and street light main
- 5. Signage and traffic control devices are safety items and shall be installed prior to issuance of any certificate of occupancy or plat approval. However, in larger developments, exact locations of stop and yield signs may need to be determined after full buildout when traffic patterns have been established. In this case, contractor shall provide indicated "City-placed" signs, signposts, and brackets to the City sign specialist (425) 328-7954 for later installation by the City. All signage shall be in accordance with the Manual on Uniform Traffic Control Devices (MUTCD).
- 6. Prior to any sign or striping installation or removal the Contractor shall contact the City sign specialist (425) 328-7954 to arrange for an on-site meeting to discuss placement and uniformity.
- 7. New or revised stop signs or yield signs shall be advance warned using the procedure outlined in the MUTCD. Advance warning signs and flags shall be maintained by installer for 30 days and then removed.

CHANNELIZATION & SIGNING

Approved permanent traffic control signs and markings within the public Right-of-Way (ROW) shall be installed by City forces. The developer shall pay for installation of all devices. The inspector shall notify the Department of Public Works (DPW) Traffic Operations when the project is ready for channelization and signing

During project construction, the contractor shall provide and maintain all temporary construction signs, traffic control signs, delineators and temporary markings as required. All signs, traffic control signs, delineators and temporary markings shall be according to the current Manual of Uniform Traffic Control Devices (MUTCD).

Access by emergency vehicles shall be maintained at all times during construction.

After work within the traveled roadway is competed at the end of each day, the road shall be clear of debris and equipment and completely open to traffic (unless otherwise approved by the DPW of the City). Lighted barricades or barrels shall delineate all areas within the roadway affected by construction (i.e., edge of pavement, new curb edges not illuminated by street lights).

A ROW use permit is required from the DPW for any lane/road closure within the City ROW. Contact DPW at least 15 days prior to construction activity within the public ROW. City does not have jurisdiction on state routes, roadways within incorporated cities, private roads, or private property. For any activity encroaching on such property, the applicant shall obtain permission from the appropriate authority.

WET WEATHER GRADING NOTES

Grading from October 1 to March 31st is not permitted without specific approval. If permitted, soil may be exposed for not more than two (2) days, if wet weather grading has been permitted by city. From May 1 to September 30, soil shall not be exposed for more than seven (7) days. Ground cover BMPs shall be used to stabilize the soil including but not limited to PVC cover, straw or other BMPs approved by the

 STORMWATER NOTES During construction, all existing and newly ir All storm manholes shall conform to City Statsandard Detail No. 4-040-004. Manhole ring and cover shall conform to City statspounds. Catch basins shall by Type I unless otherwise conform to City Standard Detail No.4-080-00 the invert of the storm pipe. Catch basins Type II shall conform to City Statser the grate to the invert of the storm pipe. Cast iron or ductile iron frame and grate shastream". Solid catch basin lids (square unless SM60, SM52, or SM44 or equal). Vaned grathshall conform to WSDOT Standard Plan B-30 be depressed 0.1 feet below pavement lev All catch basins and manholes located out All catch basins and manholes shall have low with Type II manholes. 	Installed drainage structures shall be protected from sediments. Indard Detail No.4-080-009. Flow control manhole/oil water separator shall conform to City try Standard Detail 4-080-009 and 4-080-015 thru 4-080-024. The cover shall be marked with nimum weight of the frame shall be 210 pounds. Minimum weight of the cover shall be 150 e approved by the City Engineer or Designated representative. Type I Catch basins shall 07 and 4-080-008 and shall be used only for depths less than 5 feet from top of the grate to andard Detail No. 4-080-009 and shall be used for depths greater than 5 feet from top of solution to City Standard Detail No.4-080-022. Grate shall be marked with "drains to sonadard Detail No. 4-080-009 and shall be used for depths greater than 5 feet from top of solution of the required on all storm structures when roadway profile is greater than 3% and 30-01 (Olympic Foundry No. SM60V or equal). Grates located in the gutter flow line shall el.	IAND TECUNOLOGIES	LANU IECHNOLOGIEO 18820 Third Avenue, N.F.	Arlington, WA 98223
 installation and/or paving. 10. Trenching, bedding, and backfill for pipe sh 11. Trench backfill of new utilities and stormwat proctor) under roadways and 90% maximur accordance with Sections 7-08.3(3) and 2-0 Specifications for Road, Bridge, and Munici infiltrate subgrade compaction should be " allow heavy compaction due to heavy equ 12. Storm pipe shall be a minimum of 10 feet av 	all conform to City Standard Detail No. 3-703-002 and-003. er drainage system features shall be compacted to 95% maximum density (modified n density (modified proctor) off roadways. Compaction shall be performed in 3.3(14)C - Method B as defined in the current edition of the WSDOT Standard coal Construction. For permeable pavement and other stormwater BMP's designed to firm and unyielding" (qualitative), and 90-92% Standard Proctor (quantitative). Do not ipment operation. The subgrade should not be subject to truck traffic. vay from building foundations and/or roof lines.		ID TECHNOLOGIES	
 After all other utilities are installed and prior 7-04.3(1) E & F of the WSDOT Standard Spec loaded and compacted to finish grade. Pro All temporary sedimentation and erosion co and significant trees shall be installed prior t Stormwater facilities with side slopes steepe vinyl coated chain link perimeter fence per and outfall pipes shall have a trash rack inst Prior to sidewalk construction; lot drainage s be PVC 3034, or SDR-35. Stub-outs shall be a these installations shall be shown on the rec Storm water retention/detention facilities, st to; City of Marysville final acceptance of the the storm drainage system. Unless otherwise noted, all storm sewer pipe concrete pipe diameters 24" or greater, AS coating or better; or corrugated aluminum; manufacturers recommendations. 	to asphalt work, all storm pipe shall pass a low pressure air test in accordance with Section ifications for Road, Bridge, and Municipal Construction. Pipe runs shall be tested with [pipe aducts used to seal the inside of the pipe are not to be used to obtain the air test. Instruction activities are not to be used to obtain the air test. In than 3:1 or with a maximum water depth greater than 3 feet shall require a powder or standard plans 3-501-007 and -008. Side slope averaging shall not be allowed. All inlet alled and a mortared riprap headwall. Refer to storm drainage note 21. ystems, stub-outs and any behind sidewalk drains must be installed as required. Pipe shall narked with a 2" x 4" with 3 feet visible above grade and marked "storm". Locations of ord drawing construction plans submitted to the City. orm drainage pipe and catch basins shall be flushed and cleaned by the developer prior e project and; upon commencement and completion of the 2-year warranty period for M C-76; or (CMP) corrugated metal. CMP to be; galvanized steel with Treatment I asphalt or AASHTO M274-70 aluminized steel. All pipes shall be installed with rubber gaskets as per		RS. RS. STATEOFW. STATEOFW. STATEOFW. STATEOFT. STORE	FOS ASTING FOS ASTING CONT FOS ALENG ALENG ALENG FOS ALENG FOS FOS FOS FOS FOS FOS FOS FOS FOS FOS
 Coverage Requirements for 12" diameter p Backfill over pipe less than 12" requires Backfill over pipe less than 24" requires Backfill over pipe greater than 24" requires 19. Corrugated Polyethylene Pipe (CPP): A. All pipe shall be smooth interior. CPP shall be B. Upon request by the City inspector, all pipe WSDOT Standard Specifications for Roc compacted to finish grade. C. Upon request by the City inspector, pipe shall pipe shall be stored on site in shipping bunk result in rejection of the pipe and/or fut E. Minimum depth of cover shall be 2 feet. F. Couplings shall be integral bell and spiaot of 	r double bell separate couplings. Split couplings will not be allowed.	PROJECT LEAD: Menle CHECKED BY: Tuler	DRAWN BY: Meir, Alex DATE: - REVISION 1: -	REVISION 2: - REVISION 3: -
 G. Backfill shall comply with Section 7-08.3(3) or modified as follows: The second paragraph of Section 7-The material used for backfilling arr from clay. Any gravel or stones income clay. All field cut culvert pipe shall be treated as 23. All pipe shall be placed on stable earth. If if is shall be excavated below grade and back 24. All landscaped and lawn areas, except are Soil Quality and Depth in Chapter 5, Volume INFILTRATION FACILITY NOTES 1. Infiltration facility installations shall be direct designee. The geotechnical engineer shall deign specification prior to final inspection. 2. The geotechnical engineer will prescribe concompacted or for soil that has been contar 3. Performance testing and verification for a factor construction of other project improvements responsible for making corrections to ensure 	f the WSDOT Standard Specifications for Road, Bridge, and Municipal Construction 08.3(3) is deleted and replaced with the following: Dound and to a point 1 foot above the top of the pipe shall be clean earth or sand, free luded in the backfill shall pass through a 1 inch sieve. Oprene gaskets at the joints. O-ring gaskets may be used for type-F coupling band. As slopes. Field cutting of culvert ends is permitted when approved by the City engineer or required in the Standard Specifications or General Special Provisions. In the opinion of the City inspector, the existing trench foundation is unsatisfactory, then it filled with gravel bedding to support the pipe. as within the dripline of preserved trees, shall be amended per BMP T5.13 Post Construction as V of the Stormwater Manual.	Quality Auto Center Marysville	15223 Smokey Point Blvd, Marysville, WA 98271 2RTION OF SECTION 33, TOWNSHIP 31 NORTH, RANGE 5 EAST, W.M.	OTEC
STAND PIPE AND SEDIMENT PON 1. The embankment of the basin should be cherosion or construction equipment. The embankment reaches the cleanout level, it shalls BIOFILTER SWALE PLANTING NO Final engineering approval is contingent on swa Development. Inspection must be requested by calling the City at least 24 hours prior to inspection date. Erosion control seed mix or shingle-weave sod, or the design water surface for the 6-month, 24-ho surface shall be at design grade for the swale. A until a well defined ground cover is established. with wet tolerant plant species. Recommended Seed Mix for Bioswales: % Weight Tall or meadow fescue 75-80 Festuca arundinacea or festuca elatior Seaside/Creeping bentgrass 10-15 agrostis palustris 5-10 Redop bentgrass 5-10 agrostis alba or Agrostis gigantea	Decked regularly to ensure that it is structurally sound and has not been damaged by prenercy spillway should be checked regularly to insure that the lining is well established uid be checked for sediment cleanout after each rainfall which produces runoff. When the be removed and properly disposed. TES Is inspection by the City of Marysville Construction Inspection Division of Community of Marysville Construction Inspection Division of Community of Marysville Construction Inspection Division of Community of Marysville Construction Inspection Division of Community Development at 360.363.8100 s determined by the City Engineer or designated representative, shall be placed above ur storm event. A minimum topsoil depth of 4" shall be placed within the swale. The topsoil on erosion control blanket shall cover the topsoil to prevent erosion of topsoil and seed mix the wetted surface area as defined by the 6-month, 24-hour storm event shall be planted % Purity % Germination 80 90 80	y Auto Center	² oint Blvd, Marysville, WA 98271 A PC	
	CONSTRUCTION DRAWING REVIEW ACKNOWLEDGEMENT THIS PLAN SHEET HAS BEEN REVIEWED AND EVALUATED FOR GENERAL COMPLIANCE WITH THE APPLICABLE CITY OF MARYSVILLE CODES AND ORDINANCES. CONFORMANCE OF THIS DESIGN WITH ALL APPLICABLE LAWS AND REGULATIONS IS THE FULL AND COMPLETE RESPONSIBILITY OF THE LICENSED DESIGN ENGINEER, WHOSE STAMP AND SIGNATURE APPEAR ON THIS SHEET. ACKNOWLEDGMENT OF CONSTRUCTION DRAWING REVIEW DOES NOT IMPLY CITY APPROVAL FOR CONSTRUCTION ACTIVITIES THAT REQUIRED OTHER COUNTY, STATE OR FEDERAL PERMIT REVIEW AND APPROVAL. THE PROPERTY OWNER AND LICENSED DESIGN ENGINEER SHALL BE RESPONSIBLE FOR THE ACQUISITION AND COMPLIANCE OF ALL APPLICABLE	Quality	15223 Smokey Pc	
	PERMITS OR AUTHORIZATIONS WHICH MAY INCLUDE BUT ARE NOT LIMITED TO: WSDFW HYDRAULIC PROJECT APPROVAL (HPA), WSDOE NOTICE OF INTENT (NOI), ANY CORPS OF ENGINEERS FILL PERMITS AND THE REQUIREMENTS OF THE ENDANGERED SPECIES ACT. THIS DAY OF, 202		C2 o	ET f

APPROVAL, PER MMC 22A.040.020 & 22A.040.030.

















A PORTION OF SECTION 33, TOWNSHIP 31 NORTH, RANGE 5 EAST, W.M.



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Sieve Size #10 #100 #200 Capacity

importing mineral aggregate.

Mineral Aggregate

Aggregate Gradation

40 percent compost.

Composi

- 730
 - SCALE: NTS

the compost may have up to 35% biosolids or manure. ratio requirements, and not exceeding the contaminant limits identified in Table 220-B, Testing Parameters, in WAC 173-350-220.

Option 1 is only applicable to sites that have the original, undisturbed soil native to the site. This will most often be forested land that is being left undisturbed in the current project. Option 2: Amend disturbed soil according to the following procedures: a. Scarify subsoil to a depth of one foot. b. In planting beds, place three inches of compost and till in to an eight-inch depth. In turf areas, place two inches of compost and till in to an eight-inch depth.

Apply two to four inches of arborist wood chip, coarse bark mulch, or compost mulch to planting beds after final planting. (Alternatively, disturbed soil can be amended on a site-customized manner so that it meets the soil quality criteria set forth above, as determined by a licensed engineer, geologist, landscape architect, or other person as approved by Snohomish County). Stockpile existing topsoil during grading and replace it prior to planting. Stockpiled topsoil must be amended if needed to meet the organic matter and depth

requirements by following the procedures in option (4). Remove forest duff layer and topsoil and stockpile separately, in an approved location prior to grading. Cover soil and duff piles with woven weed barrier (available from nursery supply stores) that sheds moisture yet allows airflow. Option 4: Import topsoil mix with 10% min soil organic matter content. Import topsoil mix of sufficient organic content and depth to meet the organic matter and depth requirements.

NOTE: All yards, landscape areas, or disturbed areas to receive 18 inches of Compost Amended Soils meeting the criteria of BMP 15.13. Careful removal of 9 inches of the onsite Forest Duff** could meet this requirement if properly protected and cared for during **Ignition testing of organics shall confirm that forest duff meets BMP T5.13 Specifications by an independent soils lab. Note: Grading with Heavy Equipment may render this layer unsuitable.

A PORTION OF SECTION 33, TOWNSHIP 31 NORTH, RANGE 5 EAST, W.M.

criteria using the specified test method:

• pH between 5.5 and 7.0

• CEC ≥ 5 meq/100 grams of dry soil; USEPA 9081

BIORETENTION SOIL MEDIA PROCEDURE NOTE Two acceptable criteria for Bioretention Soil Media (BSM or CAS):

 Default Bioretention Soil Media Custom Bioretention Soil Mix.

Default Bioretention Soil Media

Projects which use the following requirements for the bioretention soil media

do not have to test the media for its saturated hydraulic conductivity

Percent Fines: A range of 2 to 4 percent passing the #200 sieve is ideal and fines should not be above 5 percent for a proper functioning specification

according to ASTM D422. The aggregate portion of the BSM should be well-graded. According to

ASTM D 2487-98 (Classification of Soils for Engineering Purposes (Unified Soil Classification System)), well-graded sand should have the following gradation coefficients:

• Coefficient of Uniformity (Cu = D60/D10) equal to or greater than 4, and • Coefficient of Curve (Cc = (D30)2/D60 x D10) greater than or equal to 1 and less than or equal to 3.

The sand gradation below is often supplied as a well-graded utility or screened. With compost this blend provides enough fines for adequate water retention, hydraulic conductivity within recommended range (see below), pollutant removal capability, and plant growth characteristics for meeting design guidelines and objectives. Where existing soils meet the aggregate gradation below, those soils may be amended rather than

General Guideline for Mineral Aggregate Gradation Percent Passing 95-100 75-90 25-40 4-10

Compost to Aggregate Ratio, Organic Matter Content, Cation Exchange

Compost to aggregate ratio: 60-65 percent mineral aggregate, 35 -

• Organic matter content: 5 - 8 percent by weight. • Cation Exchange Capacity (CEC) must be > 5 milliequivalents/100

g dry soil Note: Soil mixes meeting the above specifications do not have to be tested for CEC. They will readily meet the minimum CEC.

Ash, and Organic Matter of Peat and Other Organic Soils) • 2-5 percent fines passing the 200 sieve; TMECC 04.11-A Measured (Initial) saturated hydraulic conductivity of less than 12 inches per hour; ASTM D 2434 (Standard Test Method for Permeability of Granular Soils (Constant Head)) at 85% compaction per ASTM D 1557 (Standard Test Method s for Laboratory Compaction Characteristics of Soil Using Modified Effort), Also, use Appendix V-B, Recommended Procedures for ASTM D

hydraulic conductivity test; ASTM D2974(Standard Test Method for Moisture,

Design Criteria for Custom Bioretention Soil Mixes Projects which

• 5 - 8 percent organic matter content before and after the saturated

requirements above must demonstrate compliance with the following

prefer to create a custom Bioretention Soil Mix rather than using the default

Section

Base

construction

corrected by raking or roto-tilling.

subarade in the event of system failure.

PLAN

V///

5' Min -

SCALE: NTS

PROFILE

Building

a rate of 30-If of Trench per 1,000sf of Rooftop.

from footing drain

Roof Downspout

– Splash Block

- Yard CB

OverFlow

Trench

Sump w/

Solid Lid

18" min

Fine mesh

2434 When Measuring Hydraulic Conductivity for Bioretention Soil Mixes. • Design (long-term) saturated hydraulic conductivity of more than 1 inch per hour. Note: Design saturated hydraulic conductivity is determined by applying the appropriate infiltration correction factors as explained above

under "Determining Bioretention soil mix infiltration rate." • If compost is used in creating the custom mix, it must meet all of the specifications listed below for compost.

Infiltration rates for the initial placement of Bioretention Soil Media is to be within 6 to 12 inches per hour to ensure vegetation survival.

To ensure that the BSM will support healthy plant growth and root development, contribute to biofiltration of pollutants, and not restrict infiltration when used in the proportions

cited herein, the following compost standards are required. • Meets the definition of "composted materials" in WAC 173-350-220 (including contaminant levels and other standards), available online at

http://www.ecy.wa.gov/programs/swfa/organics/soil.html

• Produced at a composting facility permitted by the WA Department of Ecology. A current list of permitted facilities is available at

http://www.ecy.wa.gov/programs/swfa/compost/ • The compost product must originate a minimum of 65 percent by volume from recycled plant waste as defined in WAC 173-350-100 as "Type I Feedstocks." A maximum of 35 percent by volume of other approved organic waste as defined in WAC 173-350-100 as "Type III", including postconsumer food waste, but not including biosolids, may be substituted for recycled plant waste. Type II and IV feedstocks shall not be used for the compost going into bioretention facilities or rain gardens. • Stable (low oxygen use and CO2 generation) and mature (capable of supporting plant growth) by tests shown below. This is critical to plant success in a bioretention soil

Moisture content range: no visible free water or dust produced when handling the material.

• Tested in accordance with the U.S. Composting Council "Testing Methods for the Examination of Compost and Composting" (TMECC), as established in the Composting Council's "Seal of Testing Assurance" (STA) program. Most Washington compost facilities now use these tests.

• Screened to the size gradations for Fine Compost under TMECC test method 02.02-B (gradations are shown in the specification in an appendix of the Low Impact

Development Technical Guidance Manual for Puget Sound)

• pH between 6.0 and 8.5 (TMECC 04.11-A). If the pH falls outside of the acceptable range, it may be modified with lime to increase the pH or iron sulfate plus sulfur to lower the pH. The lime or iron sulfate must be mixed uniformly into the soil prior to use in the bioretention area.

• Manufactured inert content less that 1% by weight (TMECC 03.08-A)

Minimum organic matter content of 40% (TMECC 05.07-A)

• Soluble salt content less than 4.0 mmhos/cm (TMECC 04.10-A)

• Maturity greater than 80% (TMECC 05.05-A "Germination and Vigor")

Stability of 7 or below (TMECC 05.08-B "Carbon Dioxide Evolution Rate")

• Carbon to nitrogen ratio (TMECC 04.01 "Total Carbon" and 04.02D "Total Kjeldahl Nitrogen") of less than 25:1. The C:N ratio may be up to 35:1 for plantings composed entirely of Puget Sound Lowland native species and up to 40:1 for coarse compost to be used as a surface mulch (not in a soil mix).

Bioretention Soil Media Specifications 2014 SMMWW Vol.

Soil Retention: The duff layer and native topsoil should be retained in an undisturbed state to the maximum extent practicable. In any areas requiring grading remove and stockpile the duff layer and topsoil on site in a designated, controlled area, not adjacent to public resources and critical areas, to be reapplied to other portions of the site where feasible. Soil quality: The resulting soil should be conducive to the type of vegetation to be established. All areas subject to clearing and grading that have not been covered by impervious surface, incorporated into a drainage facility or engineered as structural fill or slope shall, at project completion, demonstrate the following:

• A topsoil layer with a minimum organic matter content of ten percent dry weight in planting beds, and 5% organic matter content (based on a loss-on-ignition test) in turf areas, and a pH from 6.0 to 8.0 or matching the pH of the original undisturbed soil. The topsoil layer shall have a minimum depth of eight inches except where tree roots limit the depth of incorporation of amendments needed to meet the criteria. Subsoils below the topsoil layer should be scarified at least 4 inches with some incorporation of the upper material to avoid

• Quality of compost and other materials used to meet the organic content requirements:

1. The organic content for "pre-approved" amendment rates can be met only using compost meeting the compost specification for Bioretention (BMP 17.30), with the exception that

2. Compost used in bioretention areas should be stable, mature and derived from yard debris, wood waste, or other organic materials that meet the intent of the organic soil

in bioretention areas due to the possibility of exporting bio-available phosphorus in effluent.

Approved Seed

– Scarified Subsoil Amended Soils to be $\, \lrcorner\,$

2014 SMMWW Vol.

tilled into sub-soils

– Compost Amended Soii.

└ Native sub-sol

4. The carbon to nitrogen ratio may be as high as 35:1 for plantings composed entirely of plants native to the Puget Sound Lowlands region.

3. The compost must also have an organic matter content of 35% to 65%, and a carbon to nitrogen ratio below 25:1.

amendment specification. Biosolids and manure composts can be higher in bioavailable phosphorus than compost derived from yard or plant waste and therefore are not allowed

